

We Claim:

1. A process for making biomedical absorbable foams suitable for use in the repair and regeneration of dermal tissue, comprising:

5 preparing a homogenous solution comprising a synthetic, biocompatible, bioabsorbable, aliphatic, elastomeric copolymer comprising copolymerized  $\epsilon$ -caprolactone and glycolide at a molar ratio of  $\epsilon$ -caprolactone:glycolide ranging from about 30:70 to about  
10 40:60 and a solvent in which the copolymer is soluble, wherein the homogenous solution comprises about 5 percent by weight of the copolymer and about 95 percent by weight of the solvent,

5 placing the homogenous solution in a mold or other device suitable for preparing foam tissue scaffolds suitable for use in repair and regeneration of dermal tissue,

0 quenching the homogenous solution at a temperature and rate of temperature reduction sufficient to provide foam tissue scaffolds suitable for use in repair and regeneration of dermal tissue,

solidifying the solution to form a solid; and

5 removing the solvent from the solid to provide a biocompatible, bioabsorbable porous foam suitable for use in the repair and regeneration of dermal tissue.

2. The process of claim 1 wherein the copolymer comprises copolymerized  $\epsilon$ -caprolactone and glycolide at

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a molar ratio of  $\epsilon$ -caprolactone:glycolide of about 35:65.

5 3. The process of claim 1 wherein the solution is quenched by exposing the solution to a temperature of about  $-17^{\circ}$ , whereby the temperature of the solution is reduced at a rate of from about  $2^{\circ}\text{C}/\text{min}$  to about  $50^{\circ}\text{C}/\text{min}$ .

0 4. The process of claim 2 wherein the solution is quenched by exposing the solution to a temperature of about  $-17^{\circ}$ , whereby the temperature of the solution is reduced at a rate of from about  $4^{\circ}\text{C}/\text{min}$  to about  $20^{\circ}\text{C}/\text{min}$ .

5 5. The process of claim 1 wherein the solution further comprises a therapeutic agent.

0 6. The process of claim 5 wherein the therapeutic agent is selected from the group consisting of anti-microbial agents, hemostatic agents, cytostatic and cytotoxic drugs, anti-infectives, hormones, analgesics, anti-inflammatory agents, oncological pharmaceuticals, peptides, small molecules, growth factors and anti-fungal agents.

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7. A synthetic, biocompatible, bioabsorbable foam scaffold suitable for use in the repair and/or regeneration of dermal tissue: comprising,

5 a synthetic, biocompatible, bioabsorbable, aliphatic, elastomeric copolymer comprising copolymerized  $\epsilon$ -caprolactone and glycolide at a molar ratio of  $\epsilon$ -caprolactone:glycolide ranging from about 30:70 to about 40:60, wherein said scaffold is about 0.25 mm to about 0.75 mm thick and has porosity of 90  
10 percent or greater.

8. The foam scaffold of claim 7 wherein said foam scaffold is about 0.4 mm to about 0.6 mm thick and has porosity from 90 percent to 97 percent.

15 9. The foam scaffold of claim 7 wherein the copolymer comprises about 35 mole percent  $\epsilon$ -caprolactone copolymerized with about 65 mole percent glycolide.

20 10. The foam scaffold of claim 9 wherein the scaffold is about 0.5 mm thick and has porosity of about 93 percent.

5 11. The foam scaffold of claim 7 wherein said scaffold is substantially absorbed by the body within about 120 days of implantation.

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12. The foam scaffold of claim 7 wherein said foam scaffold is completely absorbed by the body within about 90 days of implantation.

5 13. The foam scaffold of claim 7 wherein about 50 percent of said thickness of said foam scaffold is infiltrated by granulation tissue within about 10 days of implantation.

0 14. The foam scaffold of claim 7 wherein about 75 percent of said thickness of said foam scaffold is infiltrated by granulation tissue within about 7 days of implantation.

5 15. The foam scaffold of claim 7 wherein said foam scaffold is substantially submerged in or enveloped by granulation tissue within about 28 days of implantation.

0 16. The foam scaffold of claim 7 wherein said foam scaffold is completely submerged in or enveloped by granulation tissue within about 28 days of implantation.